UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/482,178	01/12/2000	Theodore M. Osborne, II	1306	6648

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2122	8

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

	Application No.	Applicant(s)
Office Action Summary	09/482,178	OSBORNE, II ET AL.
	Examiner	Art Unit
	Mary J. Steelman	2122

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>21 January 2003</u> .

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-22</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-22</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____ .

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)   4)☐ Interview Summary (PTO-413) Paper No(s). _____ .

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   5)☐ Notice of Informal Patent Application (PTO-152)

3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .   6)☐ Other: .

U.S. Patent and Trademark Office
PTO-326 (Rev. 04-01)   **Office Action Summary**   Part of Paper No. 8

DETAILED ACTION

1.   This action is in response to the amendment filed 21 January 2003.

2.   As per Applicant request, claims 1, 3, 8, 10, and 18-22 have been amended. Claims 1-22

are pending.

Specification

3.   The title of the invention is not descriptive. A new title is required that is clearly

indicative of the invention to which the claims are directed. Applicant's amended title "Method

and System for Testing Software Components" is not descriptive. The following title is

suggested: "Test code generator, engine and data analyzer for testing middleware applications."

4.   The amended Specification has been entered.

5.   Page 46, line 8 of the amendment, claim 22 (d) recites "lease", should be –least--.

Page 7, lines 12 of the amendment, recites "thde", should be –the--.

6.   The substitute specification filed 21 January 2003 has not been entered because it does

not conform to 37 CFR 1.125(b)because: The changes are not made obvious, a marked up copy

must show where words have been added or deleted. There is no statement that the substitute

specification includes no new matter.

§ 1.125 Substitute specification.

(a)   If the number or nature of the amendments or the legibility of the application

papers renders it difficult to consider the application, or to arrange the papers for

printing or copying, the Office may require the entire specification, including the

claims, or any part thereof, be rewritten.

(b)   A substitute specification, excluding the claims, may be filed at any point up to

payment of the issue fee if it is accompanied by:

    (1)   A statement that the substitute specification includes no new matter; and

    (2)   A marked up version of the substitute specification showing all the changes

(including the matter being added to and the matter being deleted from) to the

specification of record. Numbering the paragraphs of the specification of

record is not considered a change that must be shown pursuant to this

paragraph.

(c)   A substitute specification submitted under this section must be submitted in clean

form without markings as to amended material. The paragraphs of any substitute

specification, other than the claims, should be individually numbered in Arabic

numerals so that any amendment to the specification may be made by

replacement paragraph in accordance with § 1.121(b)(1).

(d)   A substitute specification under this section is not permitted in a reissue

application or in a reexamination proceeding.

[48 FR 2712, Jan. 20, 1983, effective Feb. 27, 1983; revised, 62 FR 53131, Oct. 10,

1997, effective Dec. 1, 1997; paras. (b)(2) and (c) revised, 65 FR 54604, Sept. 8, 2000,

effective Nov. 7, 2000]

Claim Rejections - 35 USC § 112

7.   Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for

failing to particularly point out and distinctly claim the subject matter which applicant regards as

the invention. Remove the trademark JAVA from the claim.

7.35.01 Trademark or Trade Name as a Limitation in the Claim

Claim 19 contains the trademark/trade name JAVA. Where a trademark or trade name

is used in a claim as a limitation to identify or describe a particular material or product,

the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph.

See Ex parte Simpson, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain

since the trademark or trade name cannot be used properly to identify any particular

material or product. A trademark or trade name is used to identify a source of goods,

and not the goods themselves. Thus, a trademark or trade name does not identify or

describe the goods associated with the trademark or trade name. In the present case,

the trademark/trade name is used to identify/describe byte code instruction set format and,

accordingly, the identification/description is indefinite.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

9.   **Claims 1-22** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent

5,974,572 to Weinberg et al., in view of U.S. Patent 6,523,027 to Underwood.

Weinberg disclosed a Web site (server) analysis program implemented as a collection of

software components. Weinberg's invention generates test scenarios (col. 2, lines 38-39 and col.

3, line 7) that emulates multiple concurrent users on the system. Weinberg specified that the

content tested is objects (components) (col. 6, lines 8-15) and that a user can retrieve a URL

(content object) from the server (col. 10, lines 7-9.)

Weinberg did not provide extensive details concerning the testing of application

components. However, Underwood did disclose more specific details regarding the load / stress

testing of application components (Col. 20, lines 24-35) on a server.

Per claim 1:

-a) providing test code that exercises said software component of the application under test;

(Underwood, Col. 215, lines 46-63, "Performance and Stress Test simulates high production...")

-b) synchronizing and executing a plurality of instances of the test code and recording

performance data on said software component of the application under test; (Underwood, Col.

216, lines 19-20, "Develop a simulated production-like environment for the purpose of

performance testing; Measure online user response times..."))

-c) repeating step b) multiple times, with a different number of instances of the test code;

(Underwood, Col. 216, lines 55-56, "Each test...may be designed to simulate varying user

volumes.")

-d) analyzing the recorded performance data to indicate a performance characteristic of said

software component of the application under test in response to load. (Underwood, Col. 215,

lines 48-50, "Potential bottlenecks are identified and analysis of how the system can perform...")

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of

the invention, to modify Weinberg's invention which generates a load test on a server by

including Underwood's invention which disclosed more details regarding the load testing of

application components on a server (col. 204, line 50-col. 221, line 17) because the performance

and stress testing of components can disclose bottlenecks (col. 215, lines 46-51) during the

simulation of high production data volumes, thereby ensuring response time and communication

links are adequate (col. 215, lines 46-48).

Per claim 2:

-the step of providing test code includes generating test code automatically. (Weinberg, Col. 33,

lines 47-50, "...a code module is provided that automatically generates a load testing

scenario...").

Per claim 3:

-application under test is an object oriented language and the step of providing test code

comprises providing test code to exercise one software component of the application.

(Weinberg, col. 11, lines 61-67, " also col. 19, lines 60-64, and col. 20, lines 4-7.)

Per claim 4:

-the step of synchronizing comprises starting each instance of the test code at the same time.

(Weinberg, Col. 20, lines 22-26, "A task manager process...handles issues related to the

management of the threads, including the synchronization...").

Per claim 5:

-the step of synchronizing and executing comprises executing a portion of the plurality of

instances of test code on a first computer and a portion of the plurality of instance of test code on

a second computer connected to the network. (Weinberg, Fig. 25 and col. 32, lines 51-58,

"...multiple Vusers (i.e., multiple instances of the Vuser executable) can be run simultaneously

on a single workstation...This produces a load in which multiple client requests can...be pending

at-a-time...").

Per claim 6:

Preparing a graphical display having as an independent variable the number of instances of the

test code and the dependent variable is the performance data. (Weinberg, Fig. 26 and col. 18,

lines 64-67, "...the Action Tracker plug-in communicates with the Web sites...to retrieve server

access log files for performing Web site activity analyses. Also, col. 33, lines 3-8, "...user is

presented with a set of graphical reports that allow the user (to) evaluate the site's

performance...").

Per claim 7:

Preparing a graphical display having as an independent variable the number of instances of the

test code and the dependent variable is derived from the performance data. (Weinberg, Fig. 26,

col. 32, line 64 – col. 33, line 8, "...records various performance-related characteristics of these

responses. These characteristics include...response times to individual client requests...the user

is presented with a set of graphical reports...the user can...compare response times of different

site components...").

Per claim 8:

-application under test is resident on a first server within the network and the application has a

remote interface and the test code is resident on at least a second computer within the network

and exercises the software component of the application under test using the remote interface of

the application under test. (Underwood, col. 19, lines 29-42, "Fig. 1.2 illustrates a method 150

for providing an interface between a first server and a second server with a proxy component...a

request for a business object is identified by an application on the first server...selection

criteria...is transmitted to the second server...")

Per claim 9:

-The step of analyzing includes displaying the analyzed data to a human user using a graphical

user interface. (Weinberg, Col. 33, lines 3-4, "the user is presented with a set of graphical

reports...").

Per claim 10:

-a) specifying test conditions through a user interface to a test system; (Underwood, Fig. 1.)

-b) initiating through a user interface to the test system the gathering of test data on the

performance of at least one software component of the application under test at a plurality of

load conditions; (Underwood, col. 217, lines 21-27, "Performance testing focuses on measuring

performance for a specific transaction...")

-c) specifying through a user interface to the test system the output format of the test data;

(Underwood, col. 217, lines 60-67, "After the scenario has completed its run, the performance

graphs may be generated and shown to the tester automatically. The tester can then analyze the

graphs...")

-d) displaying in the specified format the response of said at least one software component of the

application under test to load. (Underwood, col. 217, lines 60-67.)

Per claim 11:

-the specified format is a graphical format indicating response time as a function of load

conditions. (Weinberg, Col. 33, line 3-4, "...the user is presented with a set of graphical

reports...")

Per claim 12:

-the specified graphical format is a Hi-Lo plot. (Weinberg, Col. 33, line 3-4, "...the user is presented with a set of graphical reports...").

Per claim 13:

-the·step of gathering data under a plurality of load conditions comprises initiating the execution of a plurality of copies of a test program, with the number of copies executing simultaneously relates to the load condition. (Weinberg, Col. 33, lines 24-39, "To define a scenario, the user initially uses the Web Vuser Generator component to generate the Web scripts to be included within the scenario...the user specifies such details as the number of Vusers, the Web script to be run...and the number of consecutive times...The user can also define one of more Sgroups, and can specify various testing parameters...").

Per claim 14:

-the step of specifying an output format includes specifying a method by which response is measured. (Weinberg, Col. 32. line 64 – col. 33, line8, "Vuser monitors the Web site's responses to the client requests submitted by that Vuser, and records various performance-related characteristics of these responses...These characteristics include, for example, response times...user is presented with a set of graphical reports that allow the user (to) evaluate the site's performance...").

Per claim 15:

-the step of gathering test data includes recording the execution time between selected points in the test program for each simultaneously executing copy of the test program and analyzing the recorded execution times for all copies of the test program. (Weinberg, Col. 33, line 5-6, "...user can...compare response times of different site components...").

Per claim 16:

-the step of analyzing comprises determining the average and maximum execution times for each of the load conditions. (Weinberg, Col. 32. line 64 – col. 33, line8, "Vuser monitors the Web site's responses to the client requests submitted by that Vuser, and records various performance-related characteristics of these responses...These characteristics include, for example, response times...user is presented with a set of graphical reports that allow the user (to) evaluate the site's performance...").

Per claim 17:

-the computerized application under test comprises software resident on a server controlling access to a computerized database. (Weinberg, Col. 3, lines 5-15, "...based on information stored within a server access log file. The server access log file is ...generated by...Web server. These log files contain information about accesses..." Also see fig. 13, item 180 and col. 25, lines 3-11, "...specifies ...other Web server extension component 180 to which the form is addressed...Astra extract the dataset...");

-the server is connected to a network and the application under test is simultaneously accessed by a plurality of clients over the network. (Weinberg, Fig. 11 and fig. 25);

-the test system is resident on at least a second server connected to the network. (Weinberg, Figs. 11 & 25).

Per claim 18:

-a) providing test code to exercise a selected software component: (Underwood, col. 217, lines 56-57, "The testing tool may automatically launch all the virtual users...")

-b) creating a first plurality of copies of the test code; (Underwood, col. 217, lines 35-37,

"Determine the goal of the test such as the number of simulated users, the transactions to be

performed and the transactions to be timed.")

-c) simultaneously executing the first plurality of copies of test code while recording times

between events in each of the first plurality of copies of test code; (Underwood, col. 217, lines

40-45, "Record the steps a user may take to complete a transaction with the application.")

-d) creating a second plurality of copies of test code; (Underwood, col. 217, lines 46-47, "A list

of virtual users has to be defined in each workstation that is used for testing. The number of

virtual users and the scripts to be used by each virtual user have to be set up before the scenario

can be run.")

-e) simultaneously executing the second plurality of copies of test code while recording times

between events in each of the second plurality of copies of test code; (Underwood, col. 217,

lines 40-45.)

-f) repeating a predetermined number of times the steps of creating plural copies of the test code

and simultaneously executing the plural copies while recording event times; (Underwood, col.

218, lines 50-52, "A mix of various transactions may be used to ensure that the testing

clients...server...are sufficiently stressed." And col. 218, lines 55-61.)

-g) analyzing the recorded times to present information on the performance of the software

component of the application under test as a function of load. (Underwood, col. 220, lines 41-

45, "The following metrics may be collected...")

Per claim 19:

-software component comprise an ENTERPRISE JAVA BEANS technology based software

component. (Underwood, Col. 20, lines 24-25.)

Per claim 20:

-software component has a plurality of functions therein and the test code exercises functions of

the software components. (Underwood, col. 217, lines 41-45.)

Per claim 21:

-the events at which times are recorded includes times at which commands are issued to access

functions of the software components and times at which execution of the commands are

completed. (Underwood, col. 220, line 45.)

Per claim 22:

-a) coordination software; (Underwood, col. 220, lines 3-6 and Weinberg, Abstract lines 1-4.)

-b) at least one code generator, receiving as an input commands from the coordination software

and having as an output client test code; (Weinberg, Abstract, lines 20-22, "A Load Wizard

module uses this activity data to generate testing scenarios...")

-c) at least one test engine, receiving as an input commands from the coordination software, the

test engine comprising a computer server having a plurality of threads thereon, each thread

executing an instance of the client test code; (Weinberg, figs. 25&30)

-d) at least one data log having computerized memory, the memory holding timing data created

by the instances of the client test code in the plurality of threads; (Weinberg, col. 32, lines 64-

67.)

-e) at least one data analyzer software, operatively connected to the data log, having an output

that represents performance of the software component of the application under test in response

to load. (Weinberg, col. 33, lines 3-4, "...user is presented with a set of graphical reports..." and

Underwood, col. 217, lines 60-67, "Analysis of Performance Graphs and Reports...")

Response to Arguments

10.   Applicant's arguments filed 21 January 2003 have been fully considered but they are not

persuasive.

Applicants have argued, in substance, the following:

The invention tests technology based software components (components cobbled together

to make up an application). Weinberg tests the entire application as a single unit, not the

individual components.

It is noted that the Weinberg reference was relied on as a web site analysis program with

the ability to generate testing scenarios for load testing a web site. Underwood provided more

details on testing individual components of an application.

Therefore, the rejection of claims 1-22 is proper and maintained herein.

Conclusion

11.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

12.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

U.S. Patent No. 4,617,663 to Lake et al., (Interface testing of Software systems,

generating software scripts.)

U.S. Patent No. 5,671,351 to Wild et al., (System and method for automated testing and

monitoring of software applications, outputs report.)

U.S. Pat No. 5,812,780 to Chen et al., (Method and system and product for assessing a

server application performance. Fig. 7 & col. 15, line 65 – col. 16, line 55, "...analysis of the

simulation results represented by the task response times found in the log file occurs at

performance analysis step 66...." & col. 15, line 36 – col. 16, line 51, "Once a task is completed,

the total time for completion is calculated at log response times ...After the execution of the user

load simulation...analysis of the simulation results ...found in the log file occurs at performance

analysis step 66. Performance analysis...comprises ordering the response times...other response

time based statistics could advantageously be used as part of he present invention...weighted

average response time...Network administrators may make graphs..." & col. 16, lines 6-7,

"...ordering the response times...from the quickest to the longest...")

U.S. Pat No. 5,881,269 to Dobbelstein, (Simulation of multiple local area network clients

on a single workstation.)

U.S. Pat No. 6,002,871 to Duggan et al., (Multi-user application program testing tool.)

13.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Mary Steelman, whose telephone number is (703) 305-4564. The

examiner can normally be reached Monday through Thursday, from 7:00 A.M. to 5:30 P.M. If

attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor,

Gregory Morse can be reached on (703) 308-4789.

The fax phone numbers are (703) 746-7240 for regular communications and (703) 746-

7239 for After Final communications. Any inquiry of a general nature or relating to the status of

this application or proceeding should be directed to the receptionist whose telephone number is

(703) 305-3900.

MS

03/07/2003

ANIL KHATRI
PRIMARY EXAMINER